

Current Research on Cybersecurity in Europe

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The International Symposia on Computer and Information Sciences (ISCIS) launched in Ankara, Turkey 1986 in Turkey and the 31st such event took place in Krakow, Poland, in 2016. Recent ISCIS Symposia, centres broadly on computer science and engineering, have been published by Springer and attracted hundreds of thousands of paper downloads over the years [16,17,18,19,20,21,22]. In 2018, both the present ISCIS 2018 Workshop on Cybersecurity, and the regular ISCIS 2018 Symposium in September 2018, are taking place.

Cybersecurity is at the forefront of our concerns for Information Technology across the world, Thus the number of research projects funded by the European Commission in this field has significantly increased, and these Proceedings [15] present some of the current trends and outcomes of this research.

I am particularly grateful to my co-editors P. Campegiani, T. Czachórski, S. Katsikas, I. Komnios, L. Romano and D. Tzovaras for their active participation in refereeing and improving the papers. I am also grateful to all those who submitted papers, and unfortunately we were unable to include into these Proceedings all the papers that were submitted.

These Proceedings [15] start with an overview [2] of the contents of this volume, providing insight into how some of these contributions are interconnected and linking them to prior ideas and work. It then follows with a series of research papers on Cybersecurity research in Europe that covers five projects funded by the European Commission:

- KONFIDO on the security of communications and data transfers for interconnected European national or regional health services,
- GHOST regarding the security of IoT systems for the home, and the design of secure IoT home gateways,
- SerIoT on the Cybersecurity of IoT systems in general with a range of applications in supply chains, smart cities, and other areas,
- NEMESYS, a now completed research project on the security of mobile networks, and
- SDK4ED, a new project that addresses security only incidentally but that focuses of broader issues of computation time, energy consumption and reliability of software.

The papers included from the KONFIDO project concerning the security of trans-European data transfers for healthcare are [3], [5], [4] and [6]. The papers concerning the IoT which cover different aspects of the GHOST project include [7], [8], [9], and [10]. Other work in these Proceedings describes the new SerIoT project started in 2018 [11]. Mobile phones can connect opportunistically to ambient wireless networks such

as resulting in some malware being installed on the devices; this issue is discussed in [12] where machine learning techniques are used to detect malware attacks. On a related but distinct matter, a paper from the NEMESYS Project [13] presents research on attacks to the signalling and control plane of mobile networks, and shows how such attacks may be detected and mitigated.

The final paper in this volume addresses a problem that is common to all of the projects and papers that have are discussed in this volume, namely how to check the security of the software that is used in all of our systems. This last paper proposes a static analysis approach to test and verify the security of software [14], and this work emanates from the SDK4ED project funded by the European Commission.

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